State of the Community: Where have we been? Where are we going?

George Hripcsak MD MS
Director, Columbia University OHDSI Coordinating Center
Professor of Biomedical Informatics
Columbia University Irving Medical Center
Welcome to OHDSI 2023!
We thank the FDA for their generous support of the 2023 OHDSI symposium through the FDA SCIENTIFIC CONFERENCE GRANT PROGRAM (R13FD006972)
Thank you OHDSI 2023 Symposium Sponsors!
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- Tina Parciak
Thank you to those who made today happen

- Elisse Katzman
- Craig Sachson
- Jody-Ann McLeggon
- Ann Marshak
- Anita Barrett
- Sofia Ellis-Chin
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- Patrick Ryan

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- Kanchan Chaudhari
- Cindy Chen
- Pooja Desai
- Abby Newbury
- Elise Ruan
- Harry Reyes
- OHDSI Steering Workgroup
Thank you Craig Sachson

Soon to be Happy 10th Birthday OHDSI
November 6 or December 16, 2013
OHDSI’s mission

To improve health by empowering a community to collaboratively generate the evidence that promotes better health decisions and better care
OHDSI’s values

• **Innovation**: Observational research is a field which will benefit greatly from disruptive thinking. We actively seek and encourage fresh methodological approaches in our work.

• **Reproducibility**: Accurate, reproducible, and well-calibrated evidence is necessary for health improvement.

• **Community**: Everyone is welcome to actively participate in OHDSI, whether you are a patient, a health professional, a researcher, or someone who simply believes in our cause.

• **Collaboration**: We work collectively to prioritize and address the real world needs of our community’s participants.

• **Openness**: We strive to make all our community’s proceeds open and publicly accessible, including the methods, tools and the evidence that we generate.

• **Beneficence**: We seek to protect the rights of individuals and organizations within our community at all times.
To improve health by empowering a community to collaboratively generate the evidence that promotes better health decisions and better care.
Map of collaborators

OHDSI By The Numbers

- 3,758 collaborators
- 83 countries
- 21 time zones
- 6 continents
- 1 community
Thank you, EHDEN for the success in building an OHDSI community across Europe.

### Regional Chapters and National Nodes

An OHDSI regional chapter represents a group of OHDSI collaborators located in a geographic area who wish to hold local networking events and meetings to address problems specific to their geographic location.

The OHDSI Europe Chapter, in collaboration with the EHDEN project, recently created National Nodes to facilitate national and international collaborations.

An OHDSI Europe National Node is a collection of research institutes within a member country. The Node builds on the strengths of the stakeholders and scientific communities of that country.

Each Node has a lead institute that oversees the work of that Node and assigns a lead and co-lead.

#### Regional Chapters

<table>
<thead>
<tr>
<th>Region</th>
<th>Lead:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Africa</td>
<td>Ahmed El Sayed, Cynthia Sung</td>
</tr>
<tr>
<td>Australia</td>
<td>Nicole Pratt</td>
</tr>
<tr>
<td>China</td>
<td>Hua Xu</td>
</tr>
<tr>
<td>Europe</td>
<td>Peter Rijnbæk</td>
</tr>
<tr>
<td>India</td>
<td>Lakshmi Kubendran</td>
</tr>
<tr>
<td>Japan</td>
<td>Tatsuo Hiramatsu</td>
</tr>
<tr>
<td>Republic of Korea</td>
<td>Seng Chan You</td>
</tr>
<tr>
<td>Singapore</td>
<td>Mengling 'Mornin' Feng</td>
</tr>
<tr>
<td>Taiwan</td>
<td>Jason Hsu</td>
</tr>
</tbody>
</table>

#### European National Nodes

<table>
<thead>
<tr>
<th>Country</th>
<th>Lead Institutions:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belgium</td>
<td>Hasselt University, University Hospital Antwerp</td>
</tr>
<tr>
<td>Germany</td>
<td>Technische Universitat Dresden</td>
</tr>
<tr>
<td>Greece</td>
<td>The Institute of Applied Biosciences, Centre for Research and Technology Helios</td>
</tr>
<tr>
<td>Italy</td>
<td>University of Pavla</td>
</tr>
<tr>
<td>Luxembourg</td>
<td>Luxembourg Institute of Health, Information Technology for Translational Medicine S.A.</td>
</tr>
<tr>
<td>The Netherlands</td>
<td>Erasmus MC University Medical Center</td>
</tr>
<tr>
<td>Portugal</td>
<td>Centro Hospitalar E Universitario De Coimbra Epe</td>
</tr>
<tr>
<td>Spain</td>
<td>Consorci Paré de Sant Mar Barcelona, IDIAPGB, IDIBELL</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>Health Data Science Section, Botnar Research Centre, University of Oxford</td>
</tr>
</tbody>
</table>
OHDSI Workgroups

OHDSI has a central mission to improve health globally, but there are countless areas where our community can be of service. Work around data, methods, open-source tools, and clinical applications are all pieces of the puzzle, and within OHDSI, there are opportunities to work in any or many of these areas.

Our workgroups, led by the extraordinary leaders shown on these pages, present opportunities for all community members to find a home for their talents and passions, and make meaningful contributions. We are always looking for new collaborators. See an area where you want to contribute? Please Join The Journey!

www.ohdsi.org/workgroups
OHDSI standardized vocabularies

OHDSI Vocabularies By The Numbers

- 11,027,290 concepts
- 3,598,454 standard concepts
- 847,008 classification concepts
- 82,142,038 concept relationships
- 87,967,689 ancestral relationships
- 142 vocabularies
- 44 domains

1 Shared Resource to Enable Data Standards
OHDSI Vocabularies Improvement Initiative

Landscape assessment

**FINDINGS**
- 87% of the community feels confident about Vocabularies’ integrity
- Most commonly used vocabularies: SNOMED, ICD 9/10 (US and int versions), MedDRA, ICD-O3, ATC, RxNorm/RxE, ICD10PCS, ICD9Proc, CPT4, LOINC, CVX, HCPCS, UCUM, NDC, NAACCR, Cancer Modifier
- Most update data annually or semi-annually

**NEEDS**
- Transparent release schedule
- Vocabulary changes, versioning
- Transparent QA/QC
- Better coverage and hierarchies
- More documentation and educational materials

Vocabulary committee

Vocabulary team

Release schedule and roadmap

Community contributions

Quality framework & documentation

Will hear more about this in Alexander’s talk
OMOP Common Data Model adoption

OMOP CDM Users By The Numbers

- 534 data sources
- 49 countries
- 956 million unique patient records (12% of world’s population)
Will hear more about this in Clair's talk...
HADES

HADES is a set of open source R packages for large scale analytics, including population characterization, population-level causal effect estimation, and patient-level prediction. The packages offer R functions that together can be used to perform an observational study through the full journey from data to evidence, including data manipulation, statistical modeling, and results generation with supporting statistics, tables, and figures. Each package includes functions for specifying and subsequently executing multiple analyses efficiently. HADES supports best practices for use of observational data as learned from previous and ongoing research, such as transparency, reproducibility, as well as measuring of the operating characteristics of methods in a particular context and subsequent empirical calibration of estimates produced by the methods. Learn more about the individual HADES packages in this section.

The eight HADES packages shown above have been released on CRAN and have been downloaded more than 500,000 times.

Will hear more about this in Katy’s talk
OHDSI scholarship

Publications & Cumulative Citations

Summary

609
PubMed Manuscripts

3613
PubMed Authors

![Graph showing publications and cumulative citations over years 2010 to 2023.]
OHDSI collaborations in scholarship
Save Our Sisyphus Challenge

OHDSI’s central mission is to generate real-world evidence that positively impacts global health. Achieving that mission requires rigorous network studies and an open-source system that can build trust in the evidence generated through these collaborative studies.

The OHDSI community works hard to build both methodological best practices for network studies and the open-source tools to carry them forward, but that doesn’t mean the process is simple. In fact, it’s so challenging that it requires a team effort.

During the spring of 2023, the OHDSI community initiated the SOS Challenge, a global effort to design, implement, execute, and ultimately disseminate four network studies. Two studies were featured weekly over the course of nine community calls in different time zones to be inclusive for all collaborators, while two other studies were run asynchronously. While doing this, OHDSI faculty provided focused sessions to teach each step of the network study journey. The SOS Challenge homepage has each tutorial video, as well as information on all four studies.

www.ohdsi.org/SOS-Challenge

Studies & Their Leads

Will hear more about this in later panel with Cindy, Chan, Anthony, and Marc

Weekly Tutorials

1. Study Procedures
2. Study Diagnostics
3. Evidence Synthesis
4. Interpreting The Results

Learn More
Want to learn more about any of these steps? Check out the homepage, which has all tutorial videos!
Will hear more about this in Peter's and Mornin's talks
### Core Requirements
- Introduction to Real World Evidence
- Foundations of Data Models
- Methods for Observational Research 1
- Standardization of Real World Data
- Data Model Transformation
- Methods for Observational Research 2
- Research Skills and Ethics
- Capstone

### Selective
- Phenotyping
- Cohort Building
- Advanced Population Characterization
- Advanced Population Estimation
- Advanced Patient Prediction
How do you get involved?

Community calls every Tuesday:

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oct. 17</td>
<td>Symposium Week! Final Logistics + Mad Minutes</td>
</tr>
<tr>
<td>Oct. 24</td>
<td>Welcome to OHDSI</td>
</tr>
<tr>
<td>Oct. 31</td>
<td>TBA</td>
</tr>
<tr>
<td>Nov. 7</td>
<td>Meet The Titans</td>
</tr>
<tr>
<td>Nov. 14</td>
<td>Collaborator Showcase Honorees</td>
</tr>
<tr>
<td>Nov. 21</td>
<td>Showcase Software Demos</td>
</tr>
</tbody>
</table>

Upcoming Community Calls

www.ohdsi.org #JoinTheJourney OHDSI
Demonstrating reliable evidence: the LEGEND chlorthalidone story
Engineering open science systems that build trust into the real-world evidence generation and dissemination process

System characteristics:
- Standardized procedures with defined inputs and outputs
- Analysis packages implementing scientific best practices consistently applied across all data partners, generating consistent output for network synthesis
- Reproducible outputs generated by open-source analysis libraries developed and validated with verifiable unit-test coverage
- Pre-specified and objective decision thresholds for go/no go criteria
- Measurable operating characteristics of system performance
Large-scale Evidence Generation and Evaluation across a Network of Databases (LEGEND)

Perspective

Principles of Large-scale Evidence Generation and Evaluation across a Network of Databases (LEGEND)

Martijn J. Schuemie, Patrick B. Ryan, Nicole Pratt, RuiJun Chen, Seng Chan You, Harlan M. Krumholz, David Madigan, George Hripcsa, and Marc A. Suchard
LEGEND principles

1. LEGEND will generate evidence at a large scale.
2. Dissemination of the evidence will not depend on the estimated effects.
3. LEGEND will generate evidence using a prespecified analysis design.
4. LEGEND will generate evidence by consistently applying a systematic process across all research questions.
5. LEGEND will generate evidence using best practices.
6. LEGEND will include empirical evaluation through the use of control questions.
7. LEGEND will generate evidence using open-source software that is freely available to all.
8. LEGEND will not be used to evaluate new methods.
9. LEGEND will generate evidence across a network of multiple databases.
10. LEGEND will maintain data confidentiality; patient-level data will not be shared between sites in the network.
Verified and open

**VERIFIED**
- Employ only previously validated methods
- Advanced, systematic methods to control bias
- Extensive diagnostics and large-scale controls
- Test many hypotheses to assess operating characteristics
- Study many databases, locations, practice types

**OPEN**
- Fully pre-specified public protocol
- All software open-source with public parameters
- All diagnostics made public with results initially blinded
- All results made publicly available
- Results paired with detailed attestation and characterization of populations studied

**Hypothesis**

**Study design**

**Raw analytic output**

**Validated result**

**Many hypotheses, one population**

**Generalize to many populations**
What’s in a guideline?

Clinical Practice Guideline: Executive Summary


A Report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines

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56 pages containing 106 recommendations

12 Oct 2018
Validating LEGEND

Research and Applications

Large-scale evidence generation and evaluation across a network of databases (LEGEND): assessing validity using hypertension as a case study

Martijn J Schuemie,1,2 Patrick B Ryan,1,3 Nicole Pratt,4 RuiJun Chen,3,5 Seng Chan You,6 Harlan M Krumholz,7 David Madigan,6 George Hripcsak,3,9 and Marc A Suchard2,10

Figure 3: Comparison of single-drug hypertension treatments in randomized controlled trials (left) and in LEGEND (right). Each circle represents an ingredient. Color groupings indicate drug classes. A line between circles indicates the 2 drugs are compared in at least 1 study.

Source
- Randomized clinical trials meta-analysis
- LEGEND real-world evidence meta-analysis

Concordance
- Reference
- Estimates in agreement
- Statistically significant difference (p < 0.05)
<table>
<thead>
<tr>
<th>Class</th>
<th>Drug</th>
<th>Usual Dose, Range (mg/d)*</th>
<th>Daily Frequency</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary agents</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thiazide or thiazide-type diuretics</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chlorothiazide</td>
<td>12.5–25</td>
<td>1</td>
<td></td>
<td>Chlorthalidone is preferred on the basis of prolonged half-life and proven trial reduction of CVD.</td>
</tr>
<tr>
<td>Hydrochlorothiazide</td>
<td>25–50</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indapamide</td>
<td>1.25–2.5</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Metolazone</td>
<td>2.5–10</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACE inhibitors</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Benazepril</td>
<td>10–40</td>
<td>1 or 2</td>
<td></td>
<td>Do not use in combination with ARBS or direct renin inhibitor.</td>
</tr>
<tr>
<td>Captopril</td>
<td>12.5–150</td>
<td>2 or 3</td>
<td></td>
<td>There is an increased risk of hyperkalemia, especially in patients with CKD or in those on K⁺ supplements or K⁺-sparking drugs.</td>
</tr>
<tr>
<td>Enalapril</td>
<td>5–40</td>
<td>1 or 2</td>
<td></td>
<td>There is a risk of acute renal failure in patients with severe bilateral renal artery stenosis.</td>
</tr>
<tr>
<td>Fosinopril</td>
<td>10–40</td>
<td>1</td>
<td></td>
<td>Do not use if patient has history of angioedema with ACE inhibitors.</td>
</tr>
<tr>
<td>Lisinopril</td>
<td>10–40</td>
<td>1</td>
<td></td>
<td>Avoid in pregnancy.</td>
</tr>
<tr>
<td>Moxipril</td>
<td>7.5–30</td>
<td>1 or 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perindopril</td>
<td>4–16</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quinapril</td>
<td>10–80</td>
<td>1 or 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ramipril</td>
<td>2.5–10</td>
<td>1 or 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trandolapril</td>
<td>1–4</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ARBs</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Azilsartan</td>
<td>40–80</td>
<td>1</td>
<td></td>
<td>Do not use in combination with ACE inhibitors or direct renin inhibitor.</td>
</tr>
<tr>
<td>Candesartan</td>
<td>6–32</td>
<td>1</td>
<td></td>
<td>There is an increased risk of hyperkalemia in CKD or in those on K⁺ supplements or K⁺-sparking drugs.</td>
</tr>
<tr>
<td>Eprosartan</td>
<td>600–800</td>
<td>1 or 2</td>
<td></td>
<td>There is a risk of acute renal failure in patients with severe bilateral renal artery stenosis.</td>
</tr>
<tr>
<td>Irbesartan</td>
<td>150–500</td>
<td>1</td>
<td></td>
<td>Do not use if patient has history of angioedema with ARBs. Patients with a history of angioedema with an ACE inhibitor can receive an ARB beginning 5 weeks after ACE inhibitor is discontinued.</td>
</tr>
<tr>
<td>Losartan</td>
<td>50–100</td>
<td>1 or 2</td>
<td></td>
<td>Avoid in pregnancy.</td>
</tr>
<tr>
<td>Olmesartan</td>
<td>20–40</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Telmisartan</td>
<td>20–80</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Valsoartan</td>
<td>80–320</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CCB—dihydropyridines</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amloclidine</td>
<td>2.5–10</td>
<td>1</td>
<td></td>
<td>Avoid use in patients with HF/EF. amloclidine or felodipine may be used if required.</td>
</tr>
<tr>
<td>Felodipine</td>
<td>5–10</td>
<td>1</td>
<td></td>
<td>They are associated with dose-related pedal oedema, which is more common in women than men.</td>
</tr>
<tr>
<td>Isradipine</td>
<td>5–10</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nicardipine SR</td>
<td>5–20</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nifedipine LA</td>
<td>60–120</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Niidipine</td>
<td>30–90</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CCB—non-dihydropyridines</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diltiazem SR</td>
<td>180–360</td>
<td>2</td>
<td></td>
<td>Avoid routine use with beta blockers because of increased risk of bradycardia and heart block.</td>
</tr>
<tr>
<td>Diltiazem ER</td>
<td>120–480</td>
<td>1</td>
<td></td>
<td>Do not use in patients with HF/EF.</td>
</tr>
<tr>
<td>Verapamil IR</td>
<td>40–80</td>
<td>3</td>
<td></td>
<td>There are drug interactions with diltiazem and verapamil (CPY3A4 major substrate and moderate inhibitor).</td>
</tr>
<tr>
<td>Verapamil SR</td>
<td>120–480</td>
<td>1 or 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Verapamil-delayed onset ER (various forms)</td>
<td>100–480</td>
<td>1 (in the evening)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Chlorthalidone vs hydrochlorothiazide

• Hydrochlorothiazide is the most used
  – Used to teach that HCTZ’s limited duration (20h) helped the kidney

• Physiology
  – Chlorthalidone is longer lasting (and more potent)

• Indirect (network) meta-analysis favored chlorthalidone
  – Combine RCT results
  – Bias: heterogeneity of treatment effect + different populations
  – Also: differential RCT design and execution

• Old observational studies showed no effect or limited benefit chlorthaladone
  – Wrong dose, reuse of old data

• Recent observational research favored HCTZ (Dhalla)
What would the ‘target trial’ look like to compare efficacy of two initial therapies?

**Eligibility criteria:**
- Diagnosed with hypertension in 1 year prior to index
- No prior antihypertensive drug use anytime prior to index

**Treatment strategies:**
- Monotherapy with chlorthalidone (CTD)
- Monotherapy with hydrochlorothiazide (HCTZ)

**Causal contrasts of interest:**
- Intent-to-treat effect
- On-treatment effect

**Outcomes:**
- **Efficacy:**
  - Myocardial infarction
  - Stroke
  - Heart Failure
- **Safety:**
  - Known or potential adverse events, e.g.
    - Acute renal failure
    - Angioedema
    - Cough
    - Diarrhea
    - Fall
    - Gout
    - Headache
    - Hyperkalemia
    - Hyponatremia
    - Hypotension
- **Analysis plan:**
  - Time-to-first-event analysis
  - Cox proportional hazards

**Index:**
- Time zero

**Follow-up time**
What is the Diuretic Comparison Project study design?

**Eligibility criteria:**
- Age >= 65
- Diagnosed with hypertension
- Currently treated with hydrochlorothiazide
- Potassium/sodium imbalance
- Death expected in 6 months

**Causal contrasts of interest:**
- Intent-to-treat effect

**Outcomes:**
- Myocardial infarction
- Stroke
- Hospitalization for Heart Failure
- Coronary revascularization
- Non-cancer death
- Erectile dysfunction

**Analysis plan:**
- Time-to-first-event analysis
- Cox proportional hazards

**Estimated enrollment:**
13,500

**Study start:**
June 2016

**Estimated completion:**
Oct 2022

[https://clinicaltrials.gov/ct2/show/NCT02185417](https://clinicaltrials.gov/ct2/show/NCT02185417)

What can we learn now from observational data while we wait 4 years for this RCT to be completed?

**Treatment strategies:**
- Monotherapy with chlorthalidone (CTD)
- Monotherapy with hydrochlorothiazide (HCTZ)

**Index:**
- Time zero

**Follow-up time:** average: 3 years
Chlorthalidone vs hydrochlorthiazide

Comparison of Cardiovascular and Safety Outcomes of Chlorthalidone vs Hydrochlorothiazide to Treat Hypertension

George Hiipcsak, MD, MS; Marc A. Suchard, MD, PhD; Steven Shea, MD; Rui Jun Chen, MD; Seng Chan You, MD; Nicole Pratt, PhD; David Madigan, PhD; Harlan M. Krumholz, MD, SM; Patrick B. Ryan, PhD; Martijn J. Schuemie, PhD

**IMPORTANCE** Chlorthalidone is currently recommended as the preferred thiazide diuretic to treat hypertension, but no trials have directly compared risks and benefits.

**OBJECTIVE** To compare the effectiveness and safety of chlorthalidone and hydrochlorothiazide as first-line therapies for hypertension in real-world practice.

**DESIGN, SETTING, AND PARTICIPANTS** This is a Large-Scale Evidence Generation and Evaluation in a Network of Databases (LEGEND) observational comparative cohort study with large-scale propensity score stratification and negative-control and synthetic positive-control calibration on databases spanning January 2001 through December 2018. Outpatient and inpatient care episodes of first-time users of antihypertensive monotherapy in the United States based on 2 administrative claims databases and 1 collection of electronic health records were analyzed. Analysis began June 2018.
Comparison of Cardiovascular and Safety Outcomes of Chlorthalidone vs Hydrochlorothiazide to Treat Hypertension

George Hripcsak, MD, MS; Marc A. Suchard, MD, PhD; Steven Shea, MD; Ruijun Chen, MD

Figure 1. Comparability of the Populations for Commercial Claims and Encounters Database (CCAE)

A) Preference score distribution
B) Preference score distribution after propensity score adjustment

Figure 2. Homogeneity on Effectiveness

<table>
<thead>
<tr>
<th>Source</th>
<th>Uncalibrated HR (95% CI)</th>
<th>Calibrated HR (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCAE</td>
<td>0.96 (0.70-1.29)</td>
<td>0.96 (0.72-1.29)</td>
</tr>
<tr>
<td>Optum</td>
<td>1.00 (0.76-1.28)</td>
<td>1.04 (0.81-1.33)</td>
</tr>
<tr>
<td>PanTHER</td>
<td>1.10 (0.73-1.49)</td>
<td>1.00 (0.75-1.36)</td>
</tr>
<tr>
<td>Summary (I^2 &lt; 0.01)</td>
<td>1.01 (0.86-1.20)</td>
<td>1.00 (0.85-1.17)</td>
</tr>
</tbody>
</table>

Hazard ratios (HRs) and forest plot of the 3 databases and the meta-analysis for chlorthalidone vs hydrochlorothiazide on the composite cardiovascular disease outcome. The 3 databases showed excellent agreement. CCAE indicates Commercial Claims and Encounters Database.
Chlorthalidone vs hydrochlorthiazide: no detected difference in effectiveness

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Chlorthalidone, Total No.</th>
<th>Hydrochlorothiazide, No. (%)</th>
<th>Hazard Ratio (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Events</td>
<td>Patients</td>
<td>Events</td>
</tr>
<tr>
<td>Acute myocardial infarction</td>
<td>41</td>
<td>36,859</td>
<td>952</td>
</tr>
<tr>
<td>Hospitalization for heart failure</td>
<td>62</td>
<td>36,833</td>
<td>1248</td>
</tr>
<tr>
<td>Stroke</td>
<td>60</td>
<td>36,755</td>
<td>1141</td>
</tr>
<tr>
<td>Composite cardiovascular disease³</td>
<td>149</td>
<td>36,628</td>
<td>3089</td>
</tr>
</tbody>
</table>

¹ Hazard ratio for chlorthalidone vs hydrochlorothiazide (lower hazard ratio favors chlorthalidone).

² Number of patients exposed varies by outcome owing to differences in whether database has hospitalization information and outcome-specific preexposure exclusions.

³ Composite cardiovascular disease includes the first 3 outcomes and sudden cardiac death.
Safety favors HCTZ – electrolyte, renal
Chlorthalidone longer acting, potent

No difference in cardiovascular effects

Syncope

JAMA Internal Medicine | Original Investigation
Comparison of Cardiovascular and Safety Outcomes of Chlorthalidone vs Hydrochlorothiazide to Treat Hypertension
George Hripcsak, MD, MS, Marc A. Sachard, MD, PhD, Steven Shea, MD, Bui-Huyen Chen, MD, Seong Chen Yoo, MD, Nicole Pratt, PhD, David Madigan, PhD, Harlan M. Krumholz, MD, SM, Patrick R. Ryan, PhD, Marinus J. Schuemie, PhD

Acute and chronic renal failure
Hypokalemia
Hyponatremia

Weight gain
Moderately strong prior evidence suggests the superiority of chlorthalidone over hydrochlorothiazide, and there is substantial likelihood that residual confounding accounts for the lack of an observed difference in cardiovascular end points in the Hripcsak et al study. For this reason, it is imperative to await the more definitive VA trial results in 2023 before changing clinical practice recommendations on diuretic choice.

Andrew E. Moran, MD, MPH
Paul K. Whelton, MD, MSc
Thomas R. Frieden, MD, MPH
Chlorthalidone vs. Hydrochlorothiazide for Hypertension—Cardiovascular Events

Areef Iqbal, M.D., William C. Cashman, M.D., Sarah M. Leacher, Ph.D., Robert A. Lew, Ph.D., Patricia Woods, M.S.N., R.N., Peter A. Glassman, M.B., B.S., Addison A. Taylor, M.D., Cynthia Hsu, M.P.H., Alison Klint, M.S., Grant D. Huang, Ph.D., M.P.H., Mary T. Brophy, M.D., M.P.H., Louis D. Foire, M.D., M.P.H., and Ryan E. Ferguson, Sc.D., M.P.H., for the Diuretic Comparison Project Writing Group

ABSTRACT

BACKGROUND

Whether chlorthalidone is superior to hydrochlorothiazide for preventing major adverse cardiovascular events in patients with hypertension is unclear.

METHODS

In a pragmatic trial, we randomly assigned adults 65 years of age or older who were patients in the Department of Veterans Affairs health system and who had been receiving hydrochlorothiazide at a daily dose of 25 or 50 mg to continue therapy with hydrochlorothiazide or to switch to chlorthalidone at a daily dose of 12.5 or 25 mg. The primary outcome was a composite of cardiac death, myocardial infarction, stroke, heart failure resulting in hospitalization, urgent coronary revascularization for unstable angina, and non-cancer-related death. Safety was also assessed.

RESULTS

A total of 13,521 patients underwent randomization. The mean age was 72 years. At baseline, hydrochlorothiazide at a dose of 35 mg per day had been prescribed in 12,781 patients (94.9%). The baseline systolic blood pressure in each group was 139 mm Hg. At a median follow-up of 2.4 years, there was little difference in the occurrence of primary-outcome events between the chlorthalidone group (172 patients [10.4%]) and the hydrochlorothiazide group (375 patients [10.9%]) (hazard ratio, 1.04; 95% confidence interval, 0.94 to 1.16; P=0.45). There were no between-group differences in the occurrence of any of the components of the primary outcome. The incidence of hypokalemia was higher in the chlorthalidone group than in the hydrochlorothiazide group (6.0% vs. 4.46%; P=0.001).

CONCLUSIONS

In this large pragmatic trial of thiazide diuretics at doses commonly used in clinical practice, patients who received chlorthalidone did not have a lower occurrence of major cardiovascular outcome events or non-cancer-related deaths than patients who received hydrochlorothiazide. (Funded by the Veterans Affairs Cooperative Studies Program, ClinicalTrials.gov number, NCT02185417.)
Comparing LEGEND real-world evidence with DCP randomized trial result

<table>
<thead>
<tr>
<th></th>
<th>OHDSI’s LEGEND in 2018/2020</th>
<th>Diuretic Comparison Project RCT in 2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cardiovascular events</td>
<td>1.00 (0.85-1.17)</td>
<td>1.04 (0.94-1.16)</td>
</tr>
<tr>
<td>Hospitalization for Acute myocardial infarction</td>
<td>0.92 (0.64-1.31)</td>
<td>1.02 (0.80-1.28)</td>
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<tr>
<td>Hospitalization for Stroke</td>
<td>1.10 (0.86-1.41)</td>
<td>1.00 (0.74-1.36)</td>
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<tr>
<td>Hospitalization for Heart failure</td>
<td>1.05 (0.82-1.34)</td>
<td>1.04 (0.87-1.25)</td>
</tr>
<tr>
<td>Hypokalemia</td>
<td>2.72 (2.38-3.12)</td>
<td>1.38 (1.19-1.60) * ( p &lt; 0.001 )</td>
</tr>
</tbody>
</table>
HCTZ vs chlorthalidone

• VA Diuretic Comparison Project
  – Same effectiveness
  – Worse hypokalemia
  – Confirms our results
  – Different question: of patients tolerating HCTZ, should they switch to chlorthalidone
Concluding thoughts

• Establishing value of real-world evidence is a reasonable vision, which requires building trust across evidence generators and consumers
• People and processes need to be augmented with science, technology, and engineering
• We need large-scale evidence generation and large-scale collaboration
  – Data network standardization and quality assessment
  – Standardized analytic tool development
  – Methodological benchmarks and objective diagnostics
  – Phenotype development and evaluation
• Open science systems that promote transparency (open and verified) can increase reliability and efficiency

The HowOften characterization workshop this weekend addresses large-scale evidence generation and large-scale collaboration
Support The Journey

The OHDSI community is comprised of a global team of volunteers who collaborate together using open-source tools and shared best practices to support our shared mission of generating real-world evidence that promotes better health decisions and better care.

In order to foster growth in our community of nearly 3,500 volunteers across six continents, the OHDSI Coordinating Center at Columbia University has created a sponsorship program. This program allows both corporations and individuals to make meaningful contributions in support of OHDSI’s central coordinating activities. There are three levels of support, including donation amount and benefits to the sponsor, detailed below. Any level of support enhances both our community and our mission.

If you are interested, please reach out to sponsorship@ohdsi.org.

Gold Sponsorship • Donation Level: US $500k/year

- Your logo will be placed on our OHDSI Sponsors page (under Gold Level Sponsors heading) with link to your home page
- Use of OHDSI Gold Sponsor logo on your site
- Joint press release with OHDSI
- Annual meeting with OHDSI leadership to learn about current and future initiatives, and participate in an OHDSI sponsor Q&A session
- Weekly logo placement on title slide of OHDSI community call (average 100 attendees per week)
- Sponsors Spotlight feature (Q&A with a member of your organization) placed on website and newsletter
- Monthly recognition on OHDSI Twitter (2,500+ followers) and LinkedIn (5,000+) pages
- Inclusion in “Thank You Sponsors” graphic in all OHDSI monthly newsletters (4,000+ on mailing list)
- Listing in all OHDSI annual reports: Our Journey
- Recognition at all OHDSI in-person events

Silver Sponsorship • Donation Level: US $100k/year

- Your logo will be placed on our OHDSI Sponsors page (under Silver Level Sponsors heading) with link to your home page
- Use of OHDSI Silver Sponsor logo on your webpage
- Quote for your press release
- Annual meeting with OHDSI leadership to learn about current and future initiatives, and participate in an OHDSI sponsor Q&A session
- Logo placement on monthly “Thank You Sponsors” slide during OHDSI community call
- Sponsors Spotlight feature (Q&A with a member of your organization) placed on website and newsletter
- Annual recognition on OHDSI Twitter (2,000+ followers) and LinkedIn (5,500+) pages
- Inclusion in “Thank You Sponsors” graphic in all OHDSI monthly newsletters (4,200+ on mailing list)
- Listing in all OHDSI annual reports: Our Journey
- Recognition at all OHDSI in-person events

Bronze Sponsorship • Donation Level: US $25k/year

- Your logo will be placed on our OHDSI Sponsors page (under Bronze Level Sponsors heading) with link to your home page
- Use of OHDSI Bronze Sponsor logo on your webpage
- Inclusion in “Thank You Sponsors” graphic in all OHDSI monthly newsletters (4,200+ on mailing list)
- Listing in all OHDSI annual reports: Our Journey
- Recognition at all OHDSI in-person events
OHDSI Evidence Network

Clair Blacketer

Lead, CDM Workgroup
Lead, Network Data Quality Workgroup
Why are we here?

...to collaboratively generate evidence that promotes better health decisions and better care.
Why are we here?

Network studies are hard!

...to collaboratively generate evidence that promotes better health decisions and better care.
Regulatory Guidelines

Considerations for the Use of Data

• FDA recognizes that evaluation of relevant data sources or databases is an important step in the design of a study and in evaluating a study’s feasibility. Such evaluations of data sources or databases for feasibility purposes serve as a way for the sponsor and FDA to (1) assess if the data source or database is fit for use to address the research question being posed and (2) estimate the statistical precision of a potential study without evaluating outcomes for treatment arms.

• Sponsors should describe in the study protocol, or as an appendix to the protocol, the data sources evaluated when designing the study, including results from feasibility evaluations or exploratory analyses of those data sources. Sponsors should provide a justification for selecting or excluding relevant data sources from the study. Sponsors should also describe how the choice of the final data sources, study design elements, and analytic approaches aligns with the research question of interest and that the data sources, study design elements, and analytic approaches were not selected to favor particular study findings.
Pillar #2: Standardized data network

- Opportunity: Increase transparency and maturity of OHDSI data network
- Proposed solutions:
  - Create OHDSI data network catalog to encourage network studies across interested partners and promote data quality practices
  - Generate OHDSI network concept prevalence data and make accessible for ATLAS users to enable more generalizable phenotype development
  - Promote database diagnostics by having data partners share limited subset of ACHILLES to allow for users to identify databases that satisfy study criteria
Save our Sisyphus Challenge

Amongst people with psoriasis, does exposure to Risankizumab increase the risk of cerebrovascular events while on treatment relative to other biologic therapies?

Lead: Zenas Yiu

Characterization: incidence of progressive multifocal leukoencephalopathy (PML) during Multiple Sclerosis (MS) biologic exposure

Lead: Thamir Alshammary

Intravitreal Anti-VEGF and Kidney Failure

Lead: Cindy Cai

Is fluoroquinolone use really associated with the development of aortic aneurysms

Leads: Jack Janetzki, Jung Ho Kim, Seonji Kim, Jung Ah Lee, Nicole Pratt, Seng Chan You,
## SOS Database Diagnostics Results

### Data Diagnostic Explorer

**Analysis:**
- A1: aflibercept vs. bevacizumab for blinding diseases with esrd outcome
- B1: fluoroquinolone vs. cephalosporin for urinary tract infection and risk of aortic aneurysm
- C2: biologics vs disease modifying treatments for multiple sclerosis and risk of PML
- D2: risankizumab vs. tildrakizumab for psoriasis and risk of ischemic stroke

<table>
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<tr>
<th>databaseid</th>
<th>A1: aflibercept vs. bevacizumab for blinding diseases with esrd outcome</th>
<th>B1: fluoroquinolone vs. cephalosporin for urinary tract infection and risk of aortic aneurysm</th>
<th>D2: risankizumab vs. tildrakizumab for psoriasis and risk of ischemic stroke</th>
<th>C2: biologics vs disease modifying treatments for multiple sclerosis and risk of PML</th>
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</tr>
</tbody>
</table>

[https://data.ohdsi.org/DataDiagnostics/](https://data.ohdsi.org/DataDiagnostics/)
Inaugural Data Sources of the OHDSI Evidence Network

Ajou University • Ajou University
Casa di Cura Igea • Casa di Cura Igea
Clinical Center of Montenegro • Clinical Center of Montenegro
Columbia University Medical Center • Columbia University Medical Center
University College London • UK THIN
IQVIA • Australia EMR
IQVIA • Disease Analyzer France
IQVIA • Disease Analyzer Germany
IQVIA • Japan Claims
IQVIA • Japan HIS
IQVIA • Longitudinal Patient Database (LPD) in Belgium
IQVIA • Longitudinal Patient Database (LPD) in France
IQVIA • Longitudinal Patient Database (LPD) in Italy
IQVIA • Longitudinal Patient Database (LPD) in Spain
IQVIA • OMOP US Hospital Data Master
IQVIA • Pharmetrics Plus
IQVIA • UK Medical Research Data EMIS
IQVIA • UK Medical Research Data THIN
IQVIA • US Open Claims
Janssen Research & Development • JMDC
Janssen Research & Development • Merative®
Marketscan® Commercial Claims and Encounters
Janssen Research & Development • Merative®
Marketscan® Medicare Supplemental
Janssen Research & Development • Optum’s Clinformatics® Data Mart - Date of Death
Janssen Research & Development • Optum’s Clinformatics® Data Mart - Socio-Economic Status
Janssen Research & Development • Optum’s Longitudinal EHR Repository
Janssen Research & Development • Premier Healthcare Database
Johns Hopkins University • Johns Hopkins University
National University of Singapore • National University of Singapore
Northeastern • IQVIA Pharmetrics Plus
Organization Name • Data Source Name
Taipei Medical University • Taipei Medical University
Tufts University Medical Center • Tufts University Medical Center
University of Nebraska Medical Center • University of Nebraska Medical Center
University of Southern California • Keck Medical Center
US Department of Veteran’s Affairs • US Department of Veteran’s Affairs
Yinzhou Bigdata Platform • Yinzhou Bigdata Platform
Join the Evidence Network and Join us on the Journey!

SCAN ME
Acknowledgments

Frank DeFalco
Dmitry Dymshyts
Katy Sadowski
Andrew Williams
Nate Buesgens

Paul Nagy
Patrick Ryan
Martijn Scheumie
Peter Rijnbeek
Mui VanZandt
State of the Community:
OHDSI Standardized Vocabularies

Alexander Davydov
Lead of the Vocabulary team
OMOP Vocabularies

Used as a central reference system for everything

• All facts in all OMOP CDM instances
• Created in 2009
• Originally contained 19 vocabularies, 656 thousand concepts

NDC
5 ML fulvestrant 50 MG/ML Prefilled Syringe

RxNorm
concept_id = 1304049
5 ML fulvestrant 50 MG/ML Prefilled Syringe [Faslodex]
# Vocabulary principles

<table>
<thead>
<tr>
<th>Principle</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Standard concepts</strong></td>
<td>Non-duplicate concepts of fully pre-coordinated medical entities, to be stated as fact, no negations of facts, no reference to the past.</td>
</tr>
<tr>
<td><strong>Concept domains</strong></td>
<td>Assignment of concepts (rather than vocabularies) to domain categories (condition, drug, visit etc.)</td>
</tr>
<tr>
<td><strong>Comprehensive concepts</strong></td>
<td>In each domain, standard concepts must cover all possible entities</td>
</tr>
<tr>
<td><strong>Comprehensive mapping</strong></td>
<td>Mappings from terms and codes used in databases around the world</td>
</tr>
<tr>
<td><strong>Polyhierarchies</strong></td>
<td>Precalculated hierarchies organizing concepts</td>
</tr>
<tr>
<td><strong>Efficiency</strong></td>
<td>Computationally efficient data model</td>
</tr>
<tr>
<td><strong>Simplicity</strong></td>
<td>Simplicity of local implementations across the network</td>
</tr>
</tbody>
</table>
Vocabularies implementation

**Generation**

- Update public vocabularies (we adopt these)
- Create and update mapping, relationships, hierarchies
- Add new vocabularies
- Introduce de-novo vocabularies (we don’t like doing that)
- Keep up quality

**Dissemination**

- 2 releases per year: summer and winter
- Distribute through Athena
OHDSI Vocabularies in 2023

- 142 vocabularies in 44 Domains
- 11 million concepts
- 87 million ancestral and 82 million horizontal relationships

- Athena search: >1k unique users per day making ~67k requests per day
- Athena subscription: >10k total users, 2889 active users within a year
- >50 downloads per day

NDC

5 ML fulvestrant 50 MG/ML Prefilled Syringe

concept_id = 1304049
5 ML fulvestrant 50 MG/ML Prefilled Syringe [Faslodex]
Main challenge

Indication: Metastatic Breast Cancer Progression Post-Antiestrogen Therapy

HemOnc Class: Estrogen receptor inhibitor

HemOnc Comp: Fulvestrant

HemOnc Regimen:
- Buparlisib and Fulvestrant...
- Fulvestrant monotherapy

RxNorm concept_id = 1304049
5 ML fulvestrant 50 MG/ML Prefilled Syringe [Faslodex]
Main solutions

• Alignment with the community

*Systematic outreach through landscape assessment, forums, Vocab WG*

• Focus on most important and painful points

*Committee for prioritization, transparent and predictable roadmap, stable releases*

• Scalability

*Community contributions as a pathway to accommodate community needs and build a collaborative community*
What to expect

- New roadmap timeline spent: 293/609 days (48%)
- 3 overhauls in progress (condition Domain)
- 17 vocabularies for winter release
What we need

• More engagement from the community

• We need you:
  – Use community contribution
  – Join the team and help with the work
The Team

Timur Vakhitov
Oleg Zhuk
Vlad Korsik
Anna Ostropolets
Maria Rogozhkina
Mikita Salavei
Varvara Savitskaya
Irina Zherka
Dmitry Buralkin
Tetiana Orlova
Tanya Skugarevskaya
Janice Cruz
Masha Khitrun
If you haven’t yet realized

concept replaced by

Alex

concept replaced by

Alexander

Sasha

concept replaced by

Alexander
OHDSI's Open Source Community

Katy Sadowski
Real World Evidence Center of Excellence, Boehringer Ingelheim
Thank you to our contributors


Source: JHU Bitergia
Thank you to our users

- 2838 GitHub Forks
- 4168 GitHub Stars
- 5547 GitHub Subscribers
- >500k CRAN Downloads

1 Community of OHDSI Open Source Software Users

Sources: JHU Bitergia, https://www.datasciencemeta.com/rpackages
What is open source?

OHDSI open source software is developed **by the community, for the community**

- Source code is free to access, use, modify, and redistribute
- Decentralized, collaborative development process
- Focus on transparency, reliability, & auditability to support scientific use cases

All OHDSI software is freely available at [github.com/OHDSI](https://github.com/OHDSI)
Why open source?

OHDSI open source software plays a critical role in the journey from data to evidence.

• True **reproducibility** can only be achieved when the source code used to produce research results is shared
• To increase public and regulatory trust in observational research results, we must enable **openness** along all steps of the evidence-generation journey
• A welcoming development community fosters cross-functional **collaboration** and the exchange of ideas necessary to **innovate** in this highly complex field
• Making OHDSI tools freely available lowers financial barriers to adoption and enables the conduct of research at a massive scale
The OHDSI Open Source Community exists to promote the health and sustainability of the OHDSI open source software ecosystem.

2023 Achievements:
- Hosted 40 community members at the 2nd annual OHDSI DevCon
- Onboarded 21 new developers to the Kheiron Contributor Cohort
- Launched the OHDSI Technical Advisory Board
- Spun out 4 platform- and tool-specific user groups
Technical Advisory Board

The mission of the OHDSI Technical Advisory Board is to ensure the stability, security, supportability, and sustainability of OHDSI open source projects.

2023 Achievements:
• 14 representatives from across the OHDSI ecosystem joined the TAB and drafted a charter
• Kicked off work to:
  – Align on and implement standards for database platform support (including shared testing infrastructure)
  – Develop technical and process solutions for coordinated, stable, and secure OHDSI software releases

Image source: Paul Nagy

TAB Lead: Lee Evans
All modern digital infrastructure

A project some random person in Nebraska has been thanklessly maintaining since 2003.

Source: https://xkcd.com/2347/
OBSERVATIONAL RESEARCH

ALL INFRASTRUCTURE

A PROJECT SOME RANDOM PERSON IN OHDSI HAS BEEN THANKLESSLY MAINTAINING SINCE 2014

Source: https://xkcd.com/2347/
All Infrastructure

A project some random global community has been maintaining collaboratively since 2014

Source: https://xkcd.com/2347/
2023 software development achievements

• Health Analytics Data-to-Evidence Suite (HADES)
  – 83 releases & 8 new packages
  – 2 HADES-wide releases
  – Evolution of Strategus standard
• Release of BroadSea 3.0
• Support added for Snowflake and Databricks database platforms
• Release of ATLAS v2.13
Join the Journey!

Health Analytics Data-to-Evidence Suite (HADES) Hackathon
• Saturday 8:00am-12:00pm and Sunday 1:00pm-5:00pm
• Participants will work on the HADES codebase with support from several HADES maintainers. Participants can work in groups, and we welcome both new and experienced contributors to join
• Target audience: Developers interested in working on the HADES codebase. Some experience in R is recommended
OHDSI Europe 2024

Peter Rijnbeek
Erasmus MC
Prof. Dr. Ir. Peter R. Rijnbeek
Professor of Medical Informatics
Chair Department of Medical Informatics
Erasmus MC, The Netherlands
Continued expansion of network in Europe

Multiple other projects and collaborations initiated beyond EHDEN in Europe (see www.ohdsi-europe.org)
National Nodes Expansion

> 200 organisations are already involved

- Belgium
- Germany
- Greece
- Italy
- Luxemburg
- Netherlands
- Portugal
- Spain
- United Kingdom
- Israel (onboarding)
- More to come in 2024.
EUROPEAN OHDSI SYMPOSIUM

June 1 - 3 2024
Rotterdam
This year's Symposium was a great success!

The numbers

- 3 days
- 350 attendees
- 5 plenary sessions
- 10 rapid fire presentations
- 89 posters
- 7 national nodes
- 5 software demo’s
- 2 blues brothers

See www.ohdsi-europe.org for all presentations and posters.
Introduction to OHDSI (Saturday)

≈ 45 participants completely new to the community joined

- What is OHDSI?
- What can currently be done?
- What does it take?
- Community & learning more
Showcase

- Observational data standards and management (45)
- Open-source analytics development (5)
- Clinical applications (28)
- Methodological research (11)
- Early investigators mentor meetings
Expansion of DARWIN EU Network in 2024

Data Partners – Phase I

UK
1. Clinical Practice Research Datalink (CPRD GOLD)

Belgium
2. IQVIA Belgium Longitudinal Patient Data

France
3. Bordeaux University Hospital
4. IDIAPJGol
5. Parc Salut Mar Barcelona, Hospital del Mar (IMIM)

Estonia
7. University of Tartu (Biobank)

Finland
6. Auria Clinical Informatics at Hospital District of Southwest Finland (HDSF)

Netherlands
8. Integrated Primary Care Information
9. Netherlands Comprehensive Cancer Organisation

Spain

Germany
10. IQVIA Germany Disease Analyser

~26 million active patients

Currently selecting Phase II DPs via open call for expression of interest, then Phase III to follow.
OHDSI APEC Symposium 2024

Singapore Chapter Co-Chairs:
Dr. Mengling ‘Mornin’ Feng
Senior Assistant Director, National University Health System
Assistant Professor, National University of Singapore
ephfm@nus.edu.sg
APAC Symposium 2024
Day 1: Ohdsi Tutorial/Hands-on Workshop
APAC Symposium 2024
Day 2-3: Data-thon
APAC Symposium 2024
Day 4: Official Symposium
APAC Symposium 2024
Preparing for Singapore
APAC Symposium 2024

6-9 Dec 2024
<table>
<thead>
<tr>
<th>Time</th>
<th>Topic</th>
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<tbody>
<tr>
<td>7:30 - 8:30 am</td>
<td>Symposium Registration, Lite Breakfast Buffet, All-Day Exhibits</td>
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<tr>
<td>Grand Ballroom</td>
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<tr>
<td>8:30 - 9:30 am</td>
<td>State of the Community</td>
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<tr>
<td>Grand Ballroom</td>
<td>OHDSI: Where have we been? Where are we going?</td>
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<td></td>
<td>George Hripcsak, Columbia Univ.</td>
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<td>Community Highlights:</td>
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<td></td>
<td>- OMOP CDM users and the OHDSI data network Clair Blacketer, Johnson &amp; Johnson</td>
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<td>- OHDSI standardized vocabularies Alexander Davydov, Odysseus Data Services</td>
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<td>- OHDSI’s open-source community Katy Sadowski, Boehringer Ingelheim</td>
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<td>- OHDSI Europe 2024 Peter Rijnbeek, Erasmus MC</td>
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<td>- OHDSI Asia-Pacific 2024 Mengling Feng, National Univ. of Singapore</td>
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<tr>
<td>9:30 - 10:30 am</td>
<td>OHDSI Community Networking</td>
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<tr>
<td>Grand Ballroom</td>
<td>Moderators:</td>
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<tr>
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<td>- Faizah Arshad, Univ. of California-Los Angeles</td>
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<td>- Cynthia Sung, Duke-NUS Medical School</td>
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<td>10:30 am - 12:00 pm</td>
<td>Plenary: Improving the reliability and scale of case validation</td>
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<td>Grand Ballroom</td>
<td>Presenters:</td>
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<td>- Patrick Ryan, Johnson &amp; Johnson, Columbia Univ.</td>
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<td>- Anna Ostropolets, Odysseus Data Services</td>
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<td>- Martijn Schuemie, Johnson &amp; Johnson, Univ. of California-Los Angeles</td>
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<tr>
<td>12:00 pm - 1:00 pm</td>
<td>Buffet Lunch</td>
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<td>Grand Ballroom Foyer</td>
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<tr>
<td>1:00 pm - 2:00 pm</td>
<td>Panel: Lessons learned from OHDSI network studies</td>
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<td>2:00 pm - 2:45 pm</td>
<td>Collaborator Showcase, Lightning Talk Session #1: Data Standards and Methods Research</td>
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<td>2:45 - 3:30 pm</td>
<td>Collaborator Showcase, Poster / Demo Session #1</td>
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<tr>
<td>3:30 pm - 4:15 pm</td>
<td>Collaborator Showcase, Lightning Talk Session #2: Methods Research and Clinical Applications</td>
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<td>4:15 - 5:00 pm</td>
<td>Collaborator Showcase, Poster / Demo Session #2</td>
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<td>5:00 pm - 6:00 pm</td>
<td>Closing session: Scaling community, scaling collaboration</td>
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<td>6:00 pm - 7:00 pm</td>
<td>Networking Reception and Exhibits</td>
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<tr>
<td>7:00 pm - 8:00 pm</td>
<td>OHDSI Got Talent!</td>
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</table>
Congrats to our 2023 Titan Award Nominees!

Please stand!

Alexander Davydov • Aniek Markus • Anna Ostropolets • Anthony Sena • Asieh Golozar • Asiyah Lin • Atif Adam • Azza Shoaibi • Can Yin • Carlos Diaz • Center for Surgical Science team • Christie Quarles • Chungsoo Kim • Cindy Cai • Clair Blacketer • Clark Evans • Craig Sachson • Cynthia Sung • Dana Zakrzewski • Danielle Boyce • Davera Gabriel • Debo Wei • Eleanor Davies • Elisse Katzman • Erica Voss • Evan Minty • Frank DeFalco • Geert Byttebier • Georgina Kennedy • Gowtham Rao • Grahame Grieve • Gregory Klebanov • Gyeol Song • Henrik John • Hugo Vernooij • IQVIA OMOP Productized Analytics • Ismail Gogenur • Jack Brewster • James Brash • James Gilbert • Jared Houghtaling • Jasmine Gratton • Jenna Reps • Jiawei Qian • Jiayi (Jessie) Tong • Jing Li • Joel Swerdel • John Gresh • Katherine Duszynski • Katy Sadowski • Kyle Zollo-Venecek • Kyrylo Simonov • LAISDAR Study Team • Lee Evans • Lydia Liu • Manlik Kwong • Marc Suchard • Marc Twagirumukiza • Marcel de Wilde • Masha Khitrun • Marti Catala • Martijn Schuemie • Martin Lavallee • Marty Alvarez • Meghan Pettine • Mengyuan Shang • Michael Matheny • Michelle Hribar • Milou Brand • Montse Camprubi • Nathan Buesgens • Nathan Hall • Nicole Pratt • Nigel Hughes • Nikolai Grewe • OHDSI Vocabulary Team • Oleg Zhuk • Paul Dougall • Paul Nagy • Polina Talapova • Raivo Kolde • Renske Los • Sally Baxter • Sarah Seager • Stephen Town • Tal El-Hay • Thamir Alshammary • Thomas Falconer • Timur Vakhitov • Varvara Savitskaya • Vipina Keloth • Xiaoyu Lin

Winners will be announced during the #OHDSI2023 Closing Talk!
<table>
<thead>
<tr>
<th>Time</th>
<th>Topic</th>
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<tbody>
<tr>
<td>7:00 - 8:00 am</td>
<td>Lite Breakfast Buffet, All-Day Exhibits</td>
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<tr>
<td>Grand Ballroom Foyer</td>
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<tr>
<td>8:00 am - 12:00 pm</td>
<td>Introduction to OHDSI Tutorial</td>
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<tr>
<td>Various rooms</td>
<td>Common Data Model/Network Data Quality WG Meeting</td>
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<td></td>
<td>Health Analytics Data-to-Evidence Suite (HADES) Hackathon</td>
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<td>Health Equity WG Meeting</td>
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<td>Medical Imaging WG Meeting</td>
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<td>Natural Language Processing WG Meeting</td>
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<td>OHDSI Industry WG Kickoff Meeting</td>
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<td>Oncology WG Meeting</td>
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<td>Phenotype Development &amp; Evaluation WG Meeting</td>
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<td>Pregnancy and Reproductive Health Group (PRHeG) WG Meeting</td>
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<tr>
<td>12:00 - 1:00 pm</td>
<td>Lunch Buffet, Collaborator Showcase, All-Day Exhibits</td>
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<tr>
<td>Ballroom Foyer/Ballroom</td>
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<tr>
<td>1:00 pm - 5:00 pm</td>
<td>HowOften Large-Scale Characterization Workshop</td>
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<tr>
<td>Grand Ballroom</td>
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<tr>
<td>5:00 pm</td>
<td>Free Time</td>
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# Agenda • Sunday, Oct. 22

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<th>Time</th>
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<tr>
<td>7:00 - 8:00 am</td>
<td><strong>Lite Breakfast Buffet, All-Day Exhibits</strong></td>
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<td>Grand Ballroom Foyer</td>
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<tr>
<td>8:00 am - 12:00 pm</td>
<td><strong>HowOften Large-Scale Characterization Workshop</strong></td>
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<td>Grand Ballroom/Room TBA</td>
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<td></td>
<td><strong>HL7 FHIR-OMOP Connectathon</strong></td>
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<tr>
<td>12:00 - 1:00 pm</td>
<td><strong>Lunch Buffet, Collaborator Showcase, All-Day Exhibits</strong></td>
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<tr>
<td>Ballroom Foyer/Ballroom</td>
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<tr>
<td>1:00 pm - 5:00 pm</td>
<td><strong>Africa Chapter Workshop</strong></td>
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<td>Various Rooms</td>
<td><strong>Eye Care &amp; Vision Research WG Meeting</strong></td>
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<td></td>
<td><strong>Health Analytics Data-to-Evidence Suite (HADES) Hackathon</strong></td>
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<td><strong>Healthcare Systems Interest Group (HSIG) WG Meeting</strong></td>
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<td><strong>HL7 FHIR-OMOP Connectathon</strong></td>
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<td><strong>ISPE RWE for Pharmacovigilance</strong></td>
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<td><strong>Medical Devices WG Meeting</strong></td>
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<td><strong>Psychiatry WG Meeting</strong></td>
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<td><strong>Vocabulary WG Meeting</strong></td>
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<tr>
<td>5:00 pm</td>
<td><strong>Symposium Closing</strong></td>
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